The Swiss Cheese Model for Layered COVID Protection

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Accessibility

I want this zine to be accessible to you. If you'd like a larger font, an audio version, image descriptions, or anything else that would improve your access, please email me at stevielinnsprings@gmail.com.

What is the swiss cheese model?

Think of a stack of swiss cheese slices, where each slice represents a different layer of covid prevention. Every safety measure comes with its own risk of failure — the holes in the cheese. But when you layer all these measures — multiple slices of cheese — it creates more robust covid protection than each layer individually. This is the approach that many folks, like me, take to maximize covid prevention.

Who is this zine for?

This guide outlines supplementary covid safety/prevention measures you can take *in addition to masking*. I've seen excellent ig posts on this topic, but I wanted to create a downloadable/printable resource that explains each method, focusing on accessibility and affordability.

For those of you who have to go to in-person jobs or school, who live with people who are not covid-cautious, or who are able to attend in-person events, I hope this guide provides some useful ideas for adding more layers of covid protection.

Masks, testing, and vaccines are not covered in this zine because that info is readily available in many places. However, I do want to remind people that:

- Vaccines do not prevent the spread of covid; they only reduce the severity of your symptoms during an acute infection.
- Continued virus mutations have made rapid test negatives very unreliable. Consider buying at-home molecular tests for greater accuracy. @clean.air.club has a guide on this.

This guide includes tools for reducing viral load, cleaning indoor air, protecting your

eyes and skin, and more. **Viral load** is a measure of how much virus is present in your body. A higher viral load means it's easier to catch and spread covid, your symptoms may be worse, and you're more likely to acquire long covid.[1] **Cleaning indoor air** is important for preventing the spread of covid as the virus is transmitted most commonly through small airborne microdroplets, called aerosols. COVID moves like smoke and can stay in the air for hours.

Other ig accounts to follow that have excellent covid safety resources:

@clean.air.club, @lola.germs, @newlevant, @shishi.rose, @lizwhatsherface, @jaydocovid, @decolonize__, @thaibrows, @raquelsavage, and @peoplescdc.

Ventilation[2]

If you're able to open your windows, ventilation is a very effective method of cleaning the air — and it's free! I don't recommend this in areas where there's a lot of foot traffic outside your window or during wildfire season if you're in an area prone to wildfire smoke.

CPC (CetylPyridinium Chloride) mouthwash

I use: Crest Pro-Health

Cost: $5-8

Why: Reduces viral load

How to use: Gargle and spit like normal, before and after high-risk activities.

Other notes: A 2023 study found that the mechanism of rinsing and spitting is the key element to reducing viral load, so CPC

may not be absolutely necessary[3] — good news for people who are only able to tolerate flavorless mouthwash.

Xylitol-based nasal sprays[4]

I use: Xlear

Cost: $9-15. Most websites/stores sell multi-packs for a cheaper per-unit cost (e.g. 3 for $25) which is great for keeping bottles in multiple places — I keep one in my bathroom and one in my car — or you can pool your money with friends and go in on a multi-pack together.

Why: Reduces viral load

How to use: Blow your nose before using and inhale 2-4 sprays per nostril. Don't blow your nose again for at least 10 minutes. Use a tissue to wipe away any drippage. Do this before and after any high-risk activities.

Sensory note: It may feel like you jumped into a pool and snorted water up your nose. I've gotten used to it over time but I'm sure there are people who will not be able to tolerate that sensation.

Other notes: Iota carrageenan-based nasal sprays are also supposed to reduce viral load but the studies I've found are from 2021, before the virus had mutated a gajillion times, so I can't confidently speak to the efficacy compared to xylitol in 2024.

Hypochlorous acid

What I use: Base Laboratories Hypochlorous Acid Spray

Cost: $25 for two 8oz spray bottles

Why: Hypochlorous acid has been found to have antiseptic properties against covid because it creates a barrier on mucosal surfaces like your eyes, nose, and mouth.[5]

How to use: Spray on your face before and after high risk activities.

Other notes: The brand I use has chamomile in it so there's a faint fragrance, but other brands make unscented versions. Force of Nature makes a reusable/refillable unscented hypochlorous acid spray bottle system you can buy for $100 that significantly reduces the per-unit cost and waste of single-use sprays. @thaibrows has an excellent post on how to use the Force of Nature product.

SIP Valve

Cost: $15 at sipmask.com. There's a buy 4, get 1 free deal so you can pool your money with friends to reduce your per-unit costs.

Why: Allows you to drink any beverage with your mask on, without meaningfully impacting the mask's efficacy.[6]

How to use: The website has instructions for installing in any mask type. You can use it for 10 different mask installs, or 30 days if you use it daily.

Other notes: They only come with 10 straws but I found a 500-pack of straws on Amazon for $16.[7] In addition to beverages, I've found that you can also "drink" baby food and applesauce.

Portable HEPA air purifiers[8]

I use: Pure Enrichment PureZone Mini

Cost: $38-50

Why: Cleans 6 square feet of air in 12 minutes

How to use: Clip to a fanny pack, purse, or backpack or place in a cup holder on your walker/wheelchair, on your kids' stroller, or in your car. Before using it the first time,

be sure to remove the plastic covering the filter. Replace the filter every 3 months.

Other notes: The battery life isn't great so be sure to charge it after every use and if you're going to use it for an extended period of time (like on an airplane) be sure to plug it into the seatback charger or bring a portable charger. It's easy to bump the power button and turn it on (or off) without realizing it, so be mindful of that.

Room-sized HEPA air purifiers

I use: Over the last few years I've tried multiple brands including Pure Enrichment, Levoit, Aroeve, and Medify.

Cost: There are so many brands at very different price points, between $50 and $150. Make sure the one you buy is effective for the size of the room you're using it in and that it uses a HEPA filter

that can be cleaned or replaced. @jaydocovid has multiple excellent posts on how to select an air filter.

Why: Cleans the air — the effective area will vary based on the specs of the individual unit

How to use: Place it near you in any high-traffic area like school or work, or even in your home. (I have 3 running in my house 24/7.) If possible, turn it on at least an hour before you'll be around others so it has a chance to effectively clean the existing air. Before using it the first time, be sure to remove the plastic covering the filter. Replace or clean the filter every 3 months.

Other notes: @clean.air.club has a list of the states where utility/power companies provide discounts or rebates on the purchase of an air purifier. Alternatively, you can make your own DIY air purifier

using a box fan and furnace filter. There are a few different methods, so I recommend googling “DIY air purifier” to find step-by-step instructions that work for you.

CO_2 Monitor

What I use: Aranet4

Cost: $150 at aranet.com

Why: Higher concentrations of carbon dioxide in an area indicate a greater risk of covid infectiousness.[9] The best ways to combat this risk are ventilation and filtration, but a portable CO_2 monitor can help you assess the relative covid risk of spaces/situations where you have no control over air exchange but you’re able to leave if you feel unsafe — like a retail store or a doctor’s office.

How to use: Place it in a shopping cart, place it on a table or desk in front of you, or hang it on a wall using the wall mounting point on the back of the device.

Portable Far-UVC[10]

What I use: Krypton MVP

Cost: $500 at faruv.com with coupon code "SchoolMVP" (normally $600)

Why: Cleans the air in a 100-200 square foot area.

How to use: Place it on a table, desk, or airplane tray table in front of you or attach it to a fanny pack, purse, backpack, or belt strap using the $30 holster you can get at rebirthgarments.com.

Other notes: This is definitely the most costly covid prevention tool in this zine but it's also something you might not need every day, so you could pool your money

with friends and share the device. There are also room-sized Far-UVC devices but they cost $1,000+, which is cost prohibitive for almost everyone so I'm not going to cover them. If you're concerned about radiation risk, these devices use a UV wavelength that's safe for human eyes and skin.[11]

Protective eyewear

What I use: My regular prescription glasses

Cost: Varies

Why: Studies have shown that wearing glasses reduces covid risk.[12]

How to use: No special usage is required; just wear your glasses as you normally do. If you don't wear glasses, you can buy safety goggles or non-prescription glasses.

Other notes: Stoggles is a brand many people are familiar with but they're pretty expensive. Companies like Zenni and EyeBuyDirect sell less expensive versions or you can buy cheap prescription glasses at any pharmacy.

Cannabis

Cannabis has immunomodulatory properties — meaning it supports immune health — and it's also associated with lower covid severity among hospitalized patients.[13] The study cited here includes edibles, flower, and vaping, so if you're already a daily cannabis user like me, you're likely receiving some covid prevention benefit from your cannabis use.

Other preventative measures

I don't currently use these but I know other covid-cautious people include them as part of their routine:

Nasal irrigation[14], like using a neti pot or spray bottle. I find neti pot upkeep to be too much work for my level of chronic illness since you have to thoroughly clean it after each use. There's a significant risk of bacterial infection and/or irritation with these devices if they aren't properly maintained and/or if you don't use distilled water or water that's been boiled and cooled. @clean.air.club has an excellent guide to using these devices if maintenance isn't an obstacle for you.

Herbal antivirals[15], such as Echinacea[16], have been found to have antiviral properties against respiratory pathogens, like coronaviruses. The source website

linked at the end of this zine has a list of all the herbs and links to studies on the efficacy of each one.

Final notes

Remember: the single most effective covid prevention measure is wearing a well-fitting respirator mask (N95, KN95, KF94, etc.). All of these methods should be used *in addition to masking* to minimize your chances of catching covid. If you cannot afford masks, go to maskbloc.org to find your local mask bloc.

You can determine the efficacy of your mask by doing a mask fit test. Most kits are ~$300 which is very cost-prohibitive, but Phillip Neustrom makes DIY kits and sells them for $40. They've been out of stock for months but you can sign up to be notified when they're restocked at fittests4all.bigcartel.com. @thaibrows has

a post outlining how to make your own kit and how to do a mask fit test.

Many of these prevention measures have only a few studies proving their efficacy and/or were evaluated in isolation, not in conjunction with masking or other covid mitigation measures. We may be 4.5 years into this pandemic but in the grand scheme of things we're still at the beginning. As governments and the medical industrial complex continue to fight against pandemic safety, it's fallen on us to keep each other safe by sharing community wisdom and tips. If the lack of data gives you pause, but you have the financial means to afford these tools and are able to use them, consider the risk of taking these extra steps vs not. In the very early days of the pandemic we were told masks weren't effective at controlling the spread of covid and that has been proven

to be unequivocally false. Even if these additional methods are found to not be as effective as we thought, I'd rather do more to protect myself and others than find out later that I didn't do all I could have to protect myself and others.

Unless otherwise noted, my sources for prices were Amazon, Target, CVS, Rite Aid, Walgreens, and Walmart. All prices listed are in USD and based on availability in the US. If you're outside the states and have info on where to find these items and their prices, please email me at stevielinnsprings@gmail.com to include in a future version of this zine.

If you're reading this zine in a physical format and you want to be able to click on the source links, visit stevielinn.com for a free PDF. You can also get my free zine on the parallels between covid and HIV/AIDS.

Sources

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